

# LABORATORY BULLETIN

JUL 26 1973

DEPARTMENT OF HEALTH &amp; ENVIRONMENTAL SCIENCES, HELENA, MONTANA

No. 49 July 18, 1973 David B. Lackman, Ph.D., Administrator, Laboratory Division

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## SPECIAL NOTE

SUGGESTIONS IN BULLETIN NO. 47 "CHAPTER 248, MONTANA SESSION LAWS 1973, HOUSE BILL NO. 262" (PREMARITAL SEROLOGICAL TESTS) FOR COMPLYING WITH PROVISIONS OF THIS ACT WERE SOMEWHAT "PREVIOUS". IN PRACTICE, SUCH LAWS CANNOT BE IMPLEMENTED UNTIL RULES ARE DRAWN UP AND PROMULGATED; AND UNDER CURRENT PROCEDURES SEVERAL MONTHS ELAPSE BEFORE FINAL ADOPTION. PROPOSED RULES ARE PUBLISHED BY THE SECRETARY OF STATE AND, IF REQUESTED, A PUBLIC HEARING IS HELD BEFORE FINAL CONSIDERATION AND ADOPTION BY THE BOARD. THIS ALSO APPLIES TO H.B. 261 (TESTING FOR INBORN ERRORS IN METABOLISM) AND H.B. 263 (PRENATAL TESTS). IN REALITY, SUCH ACTS ARE ENABLING LEGISLATION ONLY UNTIL RULES ARE ADOPTED BY THE BOARD OF HEALTH AND ENVIRONMENTAL SCIENCES.

## ENCEPHALITIS

Human cases of Western Equine Encephalitis (WEE) usually are found in Montana during August. Fortunately, horses in the state serve as "sentinels" for detection of viral activity in nature. When a dozen or more clinical cases in horses have been reported to the State Veterinarian in the Animal Health Division, it is time to start looking for human cases. So far this year there have been no reports of horse cases. Conflicting opinions have been expressed as to whether this is a "light" or "heavy" mosquito year. Some veterinarians have reported heavy infestations locally.

Last year two fatal cases suspected of being WEE turned out to be encephalitis caused by Herpes virus (see Bulletin No. 44). There were no confirmed cases of arbovirus encephalitis although 27 cases in horses were laboratory confirmed. In 1971 there were 3 human cases of WEE (see Bulletin No. 39) and 1965 is the last year when any number of human cases were detected - 18 cases of WEE in man and over 350 cases in horses.

The Rocky Mountain Laboratory in Hamilton tests sera collected in health-screening clinics for antibodies to WEE and St. Louis encephalitis (SLE). Differences in incidence of WEE antibodies between eastern and western Montana found by Dr. Carl Eklund during the fifties seem to have diminished. For example, in Roosevelt County 3 percent of sera were positive for WEE and one percent for SLE. In two western counties, Ravalli and Lake, 2.2 percent were WEE positive and 4.3 percent were SLE positive. (HAI test with confirmation of most positives in mouse neutralization tests.) I interpret these findings as indicative of a build-up of a susceptible population and another "summer of 1941" may not be far off. That summer of 32 years ago will be remembered for widespread WEE in Eastern Montana, the Dakotas and Minnesota. (Although SLE is present in Montana, its ecology is such that we may never experience outbreaks similar to those which occur further to the South. SLE in the Las Vegas area in September 1954 represents the closest an outbreak has come to Montana. However, there is laboratory and clinical evidence of at least 3 clinical cases of SLE in Montana.)

When arbovirus encephalitis is suspected, a serum sample should be submitted to the laboratory followed by another taken 12-14 days later. If Herpes virus is suspected as a cause of encephalitis, spinal fluid and brain tissue is also useful to attempt isolation of the virus. The principal prophylactic measure against arbovirus encephalitis is mosquito control and Dr. Kenneth Quickenden, an entomologist in the Environmental Services Bureau of the Department, carries on this program.

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## COLORADO TICK FEVER

Robert Philip, M.D., Elizabeth Casper and Jack Cory (Rocky Mountain Laboratory-RML) gave a paper in May at the Joint Meeting of the Profession Associations of the U. S. Public Health Service entitled "Colorado Tick Fever: Virological Study of a Laboratory-Acquired Case". One interesting aspect of the study was the use of a direct fluorescent antibody technique for detecting Colorado Tick Fever (CTF) antigen in red blood cells. It was identified 6 days after infection and persisted for 124 days. The rate of decrease of infected rbc corresponded to the rate of turnover of normal rbc in man. Regarding a practical application of this finding they state "Certainly presence of virus in circulating red blood cells long after illness creates a potential hazard to recipients of blood transfusions in the Rocky Mountain area." (When one considers the number of cases which probably occur and are undiagnosed, a problem of considerable magnitude presents itself.)

At RML, between 1952 and 1964, over 700 cases of CTF were confirmed from blood specimens sent by physicians in the Northwest. Certainly there has been no decrease in the intervening years. This year we have isolated the virus from human material 8 times and RML reports an unusual number of isolates; which in turn suggests a large number of cases. Dr. Philip also reports that the two deaths attributed to CTF "Both occurred in children and both illnesses were characterized by uncontrollable hemorrhages of the gastro-intestinal tract." (see Bulletin No. 46)

The only prophylactic measure for CTF is to "steer clear of ticks". Products containing Di-ethyl-toluamide are the most practical repellents for use by the public. Although this is primarily a mosquito repellent, it is effective for short periods of time against ticks and is readily available in products on the market.

## ROCKY MOUNTAIN SPOTTED FEVER

Not a single case of Rocky Mountain spotted fever has been reported to the department this year nor have we any positive findings in the laboratory. Here is the National 1972 "Roundup" for spotted fever as reported in Morbidity and Mortality Reports for June 2, 1973:

528 cases reported to the Center for Disease Control  
212 clinical reports received on 212 of these cases;  
95 percent of which came from Alabama, North Carolina,  
Ohio, Tennessee, and Virginia. There were 5 deaths  
among these 212 cases.

The advisory Commission on Immunization Practices recommends vaccine routinely only for those persons with laboratory exposure to Rickettsia rickettsii and in some persons with regular occupational exposure. Death usually occurs in 7-14 days. Physicians should not wait for laboratory confirmation to begin treatment with an appropriate antibiotic - tetracycline or chloramphenicol.

### CURRENT TOPICS:

1. Tests to determine antistreptolysin O titers are no longer done in the Laboratory Division.
2. Six isolates of Salmonella enteritidis, serotype Typhimurium, have recently been made from human cases in Beaverhead County. There appears to be some epidemiological relationship to the livestock industry and the Division of Animal Health, Department of Livestock, is making an investigation.